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PATENT SPECIFICATION



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Complete Specification Accepted: Aug. 31, 1939.

512,273

PROVISIONAL SPECIFICATION

Improvements relating to Window Raising and Lowering Mechanism

We, WILMOT-BREEDEN LIMITED, a Company duly incorporated under the laws of Great Britain, of Eastern Works, Camden Street, in the City of Birmingham, 5, Hanley, and Arturim Street, a British Subject, of the Company's address, do hereby declare the nature of this invention to be as follows:

This invention has for its object to provide improved window raising and lowering mechanism, and particularly mechanism of this kind for motor vehicle windows.

The invention comprises the combination of a guide adapted to be mounted vertically or substantially vertically beneath or in any other convenient position relatively to the window, a slide mounted on the guide, and adapted for connection with the window, a pair of pulleys at or near the ends of the guide, hand operable means for actuating one of these pulleys, another pulley on the slide, and a flexible member, such as a wire cable, this member being arranged to pass around the pulleys on the guide and slide and being also secured to the slide.

In one manner of constructing in accordance with this invention a raising and lowering mechanism for a motor vehicle window we employ a guide made from sheet metal and having its longitudinal edges bent over to receive the edges of a slide which is movable in the guide. The guide is adapted to be mounted on the door beneath the window or in any other convenient position relatively to the window. When applied to the door the guide is arranged in a vertical or substantially vertical position.

At or near the upper end of the guide is mounted a pulley which is rotatable by a handle, and at or near the lower end of the guide is mounted another pulley. Preferably the latter pulley is carried on a plate slidable on the guide and is secured by an adjusting screw. Instead of the lower pulley a fixed arcuate guide may be used, and we desire it to be understood that in this connection such a guide is included by the term pulley.

On the slide is mounted another pulley, and the slide is also provided with any convenient means for effecting connection with and supporting the weight of the window.

In combination with the pulleys above mentioned we employ any convenient flexible member such as a cord, leather band, but preferably a wire cable. This member passes around all the pulleys. Preferably it is coiled several times around the hand operable pulley to ensure sufficient frictional grip on that pulley, and one or more times around the slide pulley. As regards the other pulley on the slide it is only necessary for the flexible member to subdivide its lower half, although if desired it may be coiled one or more times around this pulley as well. The ends of the flexible member are anchored to the slide.

If desired an endless wire cable or other suitable flexible member as aforesaid may be used, this being mounted on the pulleys as above described and having one part anchored to the slide.

For some purposes it may be desirable to employ a chain or a perforated steel tape as the flexible member, in which case toothed or sprocket pulleys would be used on the guide and slide.

Movement of the slide on the guide for raising or lowering the window is effected by rotation of the handle on one of the guide pulleys, this rotation having the effect of transmitting motion to the slide through the flexible member.

By means of this invention we are able to provide a mechanism for raising and lowering a window and for holding the window in any desired position, in a very simple and convenient form.

The invention is not limited to vehicle windows, as it may (with appropriate modification of detail, if necessary) be applied to other windows.

Dated this 20th day of May, 1938.

MARKS & CLERK

COMPLETE SPECIFICATION

Improvements relating to Window Raising and Lowering Mechanism

We, WILMOT-BREEDEN LIMITED, a Company duly incorporated under the Laws of Great Britain, of Eastern Works, Camden Street, in the City of Birmingham, 1 and ARTHUR SMYTH, a British Subject, of the Company's address, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention has for its object to provide improved window raising and lowering mechanism, and particularly mechanism of this kind for motor vehicle windows.

The invention comprises the combination of a guide adapted to be mounted vertically or substantially vertically beneath or in any other convenient position relatively to the window, a slide mounted on the guide and adapted for connection with the window, a pair of pulleys at or near the ends of the guide, hand operable means for actuating one of these pulleys, another pulley on the slide, and a flexible member such as a wire cable, this member being arranged to pass around the pulleys on the guide and slide, and being also secured to the slide.

In the accompanying sheet of explanatory drawings:—

Figures 1 and 2 are respectively a part sectional side elevation and a rear elevation of mechanism constructed in accordance with the invention for raising and lowering a motor vehicle window.

Figure 3 is a section on the line 3-3 of Figure 2.

In carrying the invention into effect as shown, we employ a guide *a* made from sheet metal and having its longitudinal edges bent over to receive the edges of a slide *b* which is movable in the guide. The guide *a* is adapted to be mounted on the vehicle door (not shown) beneath the window *c* or in any other convenient position relatively to the window. When applied to the door the guide *a* is arranged in a vertical or substantially vertical position.

At or near the upper end of the guide *a* is mounted a pulley *d* which is rotatable by a handle *e*, and at or near the lower end of the guide is mounted another pulley *f*. Preferably and as shown the pulley *f* is carried on a plate *g* which is slidably adjustable in the guide *a* under the action of an adjusting screw *h*. Instead of the lower pulley *f* a fixed arcuate guide may be used, and we desire

it to be understood that in this connection such a guide is included by the term pulley.

The slide *b* has mounted on it another pulley *m*, and is provided with any convenient means for effecting connection with and supporting the weight of the window *c*. Such means, in the example shown, comprises a short stem *i* on which the pulley *m* is mounted, and which is secured at one end to the slide *b*, the other end of the stem being adapted to extend through a slotted bracket *j* on a channel-shaped member *k* accommodating the lower edge of the window *c*.

In combination with the pulleys *d*, *f*, *m* we employ any convenient flexible member *n* such as a cord, leather band, but preferably a wire cable. This member *n* passes around all the pulleys *d*, *f*, *m*. Preferably it is coiled several times around the hand operable pulley *d* to ensure sufficient frictional grip on that pulley, and one or more times around the slide pulley *m*. As regards the other pulley *f* on the guide *a* it is only necessary for the flexible member *n* to subtend its lower half, although if desired it may be coiled one or more times around this pulley as well. The ends of the flexible member *n* are anchored to lugs *o* on the slide *b*.

If desired the flexible member may be formed by an endless wire cable or the like, this being mounted on the pulleys as above described and having one part anchored to the slide.

For some purposes it may be desirable to employ a perforated steel tape as the flexible member, in which case toothed or sprocket pulleys would be used on the guide and slide.

Movement of the slide *b* in the guide *a* for raising or lowering the window *c* is effected by rotation of the handle *e* on the guide pulley *d*, this rotation having the effect of transmitting motion to the slide through the flexible member *n*.

By means of this invention we are able to provide a mechanism for raising and lowering a window, and for holding the window in any desired position, in a very simple and convenient form.

The invention is not limited to vehicle windows, as it may (with appropriate modification of detail if necessary) be applied to other windows.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

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1. Window raising and lowering mechanism comprising the combination of a guide adapted to be mounted vertically or substantially vertically beneath or in any other convenient position relatively to the window, a slide mounted on the guide and adapted for connection with the window, a pair of pulleys at or near the ends of the guide, hand operable means for actuating one of these pulleys, another pulley on the slide, and a flexible mem-

ber, such as a wire cable, this member being arranged to pass around the pulley on the guide and slide and being also secured to the slide.

2. A window raising and lowering mechanism as claimed in Claim 1 and comprising the combination and arrangement of parts substantially as described and as illustrated in the accompanying drawings.

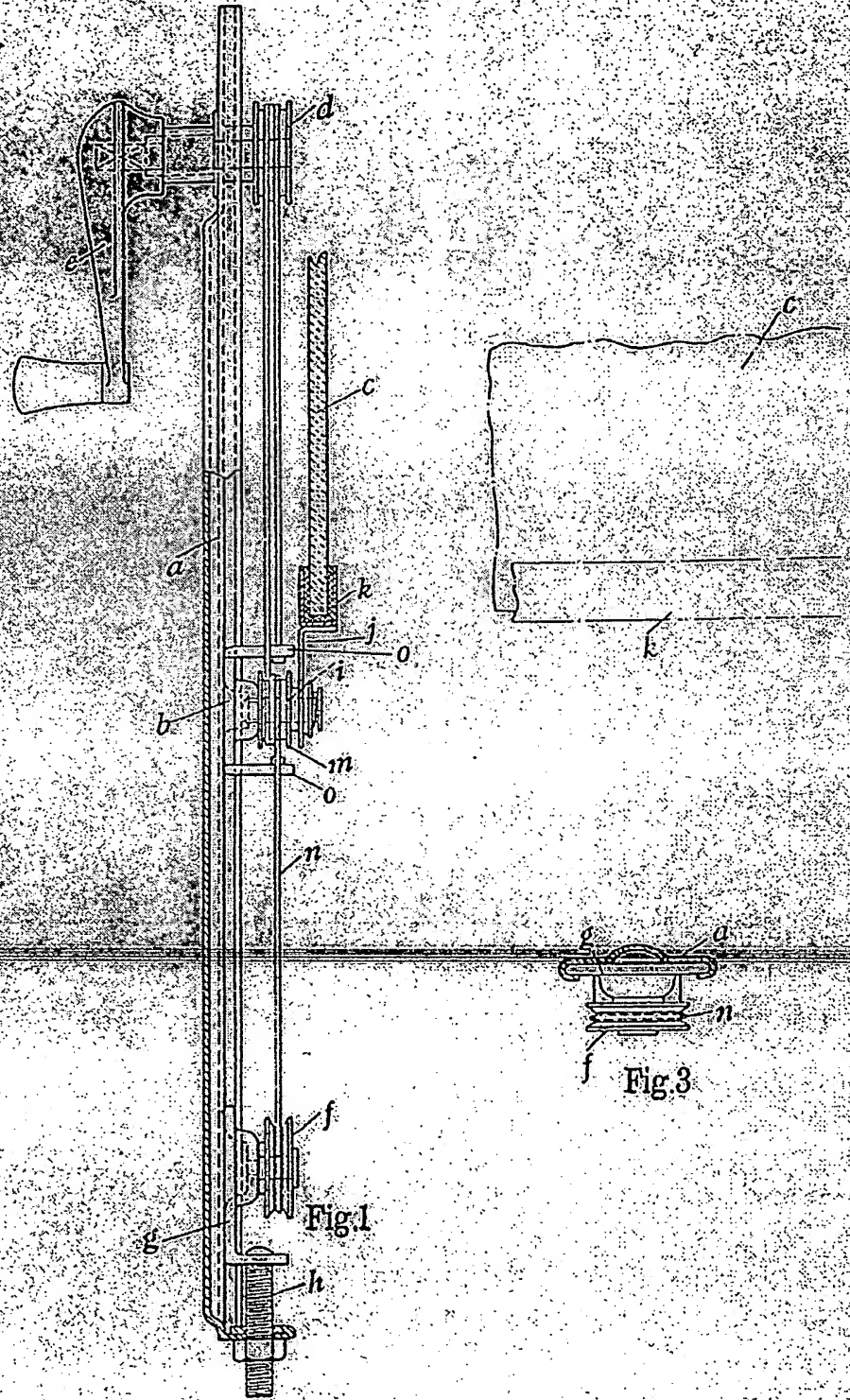
Dated this 9th day of May, 1939.

MARKS & CLERK

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512,273. COMPLETE SPECIFICATION

[This Drawing is a reproduction of the Original on a reduced scale.]



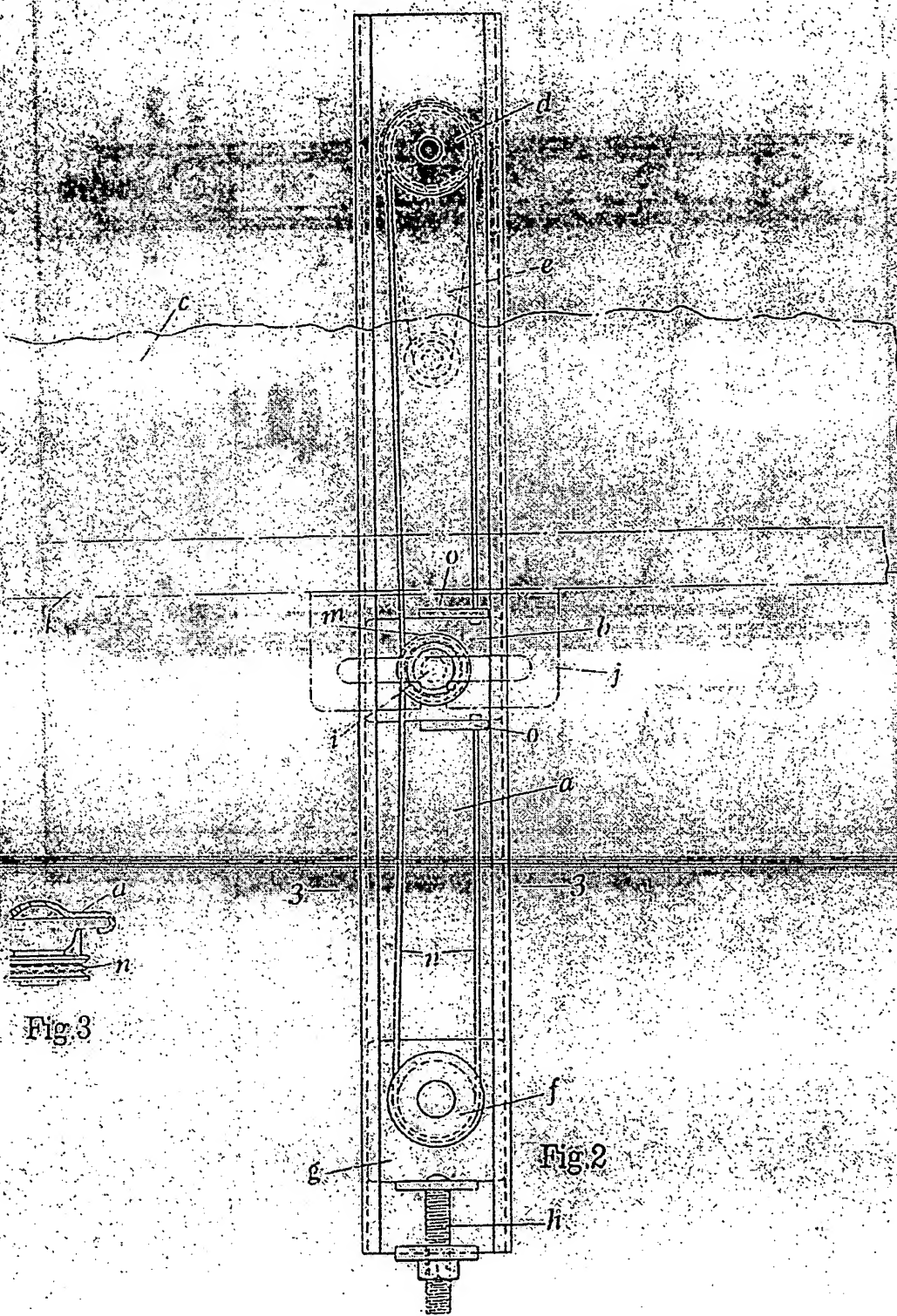
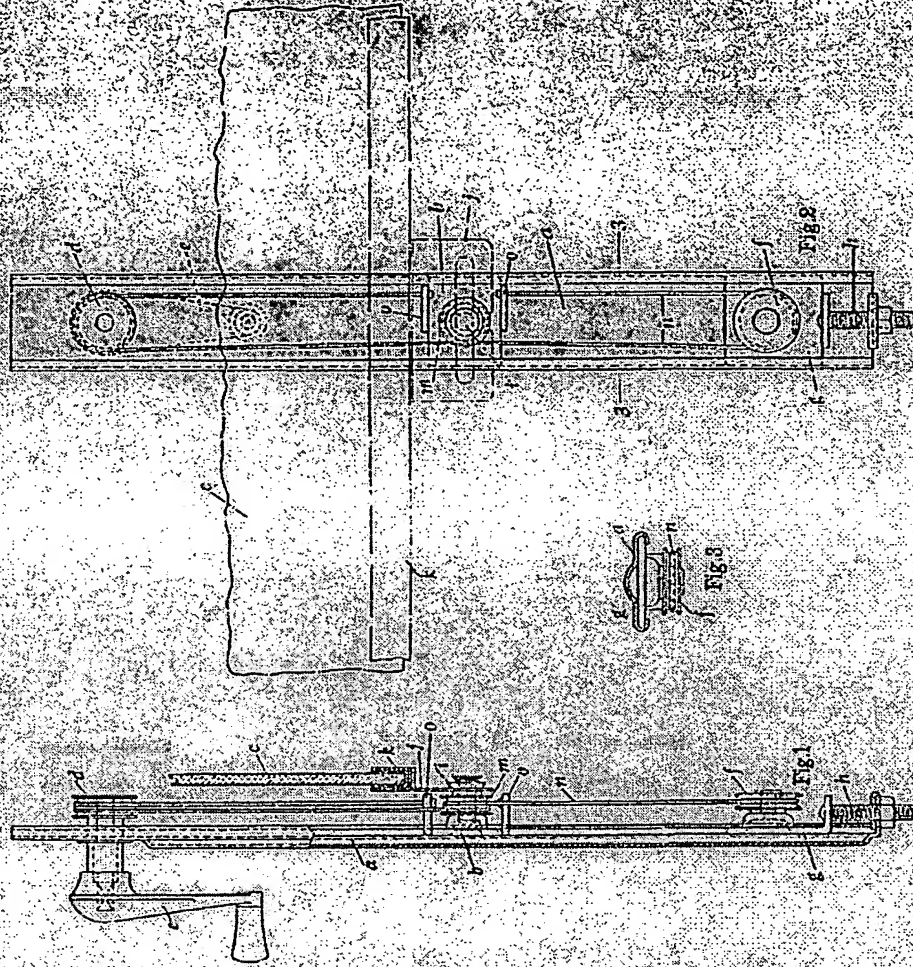


Fig. 3

Fig. 2

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[This Drawing is a reproduction of the Original on a reduced scale.]